ABSTRACT OF THE DISCLOSURE

A system and method for maximization of the global throughput of packet transport networks via traffic-load-adaptive TDM or WDM channelization. Architecturally the packet transport network is formed of logical packet transport buses that are configured in the network for transport of packets to one of the nodes of the network from the other nodes of the network. Each logical packet transport bus is dynamically channelized to create an adaptive full mesh connectivity among the nodes in the network, such that the capacity of each connection in the mesh is continuously optimized according to real-time inbound traffic patterns at the packet transport network, thereby globally optimizing the throughput of the network. The dynamic channelization of each bus is done under the control of its destination node based on the demand for transport capacity towards it presented by the individual nodes in the meshed packet transport network.